State Implementation Plan Attainment Contingency Measures for the San Joaquin Valley 15 ug/m3 Annual PM2.5 Standard

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I. OVERVIEW

Meeting health based PM2.5 standards over the next decade is the San Joaquin Valley's greatest air quality challenge. Staff of the California Air Resources Board (CARB) has been working with the San Joaquin Valley Air Pollution Control District (District) staff on the development of an integrated attainment strategy for multiple PM2.5 standards as part of a comprehensive State Implementation Plan (SIP) that will be completed later this year. This will include meeting the 15 ug/m3 annual standard established by the United States Environmental Protection Agency (U.S. EPA) in 1997. This standard will be met by 2020, the first attainment deadline of the suite of PM2.5 standards addressed in the comprehensive SIP. Air quality modeling conducted by CARB staff projects the Valley will meet this standard through ongoing implementation of current CARB and District programs.

While the full scope of SIP elements required under the Clean Air Act (Act) for the 15 ug/m3 standard will be included in the comprehensive SIP, CARB staff is advancing the contingency measures element to address a prior disapproval and sanctions clock associated with mobile source waiver measures that had not been submitted into the SIP. CARB has subsequently submitted these measures and U.S. EPA approved them in 2016. This SIP revision now provides the necessary contingency reductions in the context of the current 2020 attainment date and is necessary to eliminate the upcoming sanctions.

Contingency measures serve an important function to ensure that further emission reductions continue to occur during development of a new SIP should an area fail to attain.

The SIP revision consists of three complementary elements to satisfy contingency requirements: 1) identification of new actions that California will take if they are triggered by the region's failure to attain; 2) identification of new emission reductions that provide for approximately one year's worth of progress; and 3) a commitment for development and submission of a new SIP within one year of the region's failure to attain. Together these elements address new requirements for contingency measures established by the U.S. Court of Appeals for the Ninth Circuit in *Bahr v. U.S. Environmental Protection Agency*[1] (*Bahr*).

[1] *Bahr v. U.S. Environmental Protection Agency,* (9th Cir. 2016) 836 F.3d 1218.

II. BACKGROUND

Current SIP Development Process

The San Joaquin Valley is currently nonattainment for multiple PM2.5 standards, including the 15 ug/m3 annual PM2.5 standard originally promulgated by U.S. EPA in 1997. Implementation of measures contained in the 2008 SIP have provided for considerable air quality progress and the Valley had been expected to meet the 15 ug/m3 standard by the 2015 attainment deadline. However, severe weather conditions associated with California's drought in 2013 through 2015 stalled the Valley's progress, and the region failed to attain by the 2015 deadline. As a result, under the Act the Valley must now prepare a new SIP that will demonstrate attainment of the standard as expeditiously as possible, as well as provide for a five percent reduction in directly emitted PM2.5 or precursor emissions per year.

As emission reductions have continued through implementation of ongoing control programs, progress towards meeting the 15 ug/m3 standard has resumed, and a substantial portion of the Valley now meets the standard. The highest remaining levels are in the central and southern portions of the Valley, with a current design value of 18.4 ug/m3. Air quality modeling conducted by CARB staff projects the Valley will attain the annual standard by 2020 as a result of continued reductions from CARB and District control measures. In addition, CARB and District staff analysis demonstrates the annual five percent requirement will be met through the significant reductions in oxides of nitrogen (NOx) emissions that are occurring in this timeframe. Since U.S. EPA guidance specifies that contingency be approximately one year's worth of progress, attainment contingency consists of NOx emission reductions.

As noted above, CARB and District staff have been working on a comprehensive SIP designed to provide an integrated attainment strategy for meeting multiple PM2.5 standards over the next eight years. Although the complete suite of SIP elements will be included in the comprehensive SIP, CARB staff is advancing a SIP revision for the 15 ug/m3 standard attainment contingency measures to address the sanctions clock associated with the prior disapproval. This staff report also includes supporting documentation on the 2020 attainment date and associated control strategy.

Contingency Measures Requirements

Basic requirements for contingency measures are defined in the Act, along with the Act's General Preamble and U.S. EPA guidance which provide a framework for implementing this provision. In addition, a number of recent court cases have provided

further interpretation of implementation requirements. Specifically, the Act requires that nonattainment SIPs:

> Provide for the implementation of specific measures to be undertaken if the area fails to make reasonable further progress, or to attain the national primary ambient air quality standard by the attainment date applicable under this part. Such measures shall be included in the plan revision as contingency measures to take effect in any such case without further action by the state or the Administrator.[2]

In past SIP approvals, U.S. EPA has stated that "the purpose of contingency measures is to provide extra reductions [ ] that will provide a cushion while the plan is being revised to fully address the failure to [attain or make reasonable further progress]."[3] U.S. EPA has also described the purpose of contingency measures as providing "interim public health and welfare protection" until a more formal SIP revision corrects for any failure.[4]

In light of its view of the general purpose of contingency measures, and in the absence of specific requirements for the level of emission reductions required, U.S. EPA has generally accepted contingency measures that "equal approximately 1 year's worth of emission reductions necessary to achieve [reasonable further progress] for the area" in the aggregate.[5] U.S. EPA has accepted contingency measures that equal less than a year's worth of reasonable further progress (RFP) when the circumstances fit under "U.S. EPA's long-standing recommendation that states should consider 'the potential nature and extent of any attainment shortfall for the area' and that contingency measures 'should represent a portion of the actual emissions reductions necessary to bring about attainment in the area.'"[6]

Additional detail regarding the amount of reductions needed can be found in U.S. EPA's broadest statement interpreting SIP requirements: the General Preamble.[7] In the General Preamble, U.S. EPA explains that a somewhat smaller amount of reductions might be appropriate as a contingency if a state can show that "its SIP can be revised to correct any possible failure in less than 1 year" and in that case, only the emissions needed to maintain RFP for whatever portion of the year the state was off track would be needed in the contingency measures.[8] In essence, the ability to maintain RFP is the key consideration in measuring the appropriateness of contingency measure stringency,

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[2] CAA, § 172(c)(9).
[3] 79 Fed.Reg. 61799, 61815 (Oct. 15, 2014).
[4] 59 Fed.Reg. 41998, 42015 (Aug. 16, 1994).
[5] 72 Fed.Reg. 20586, 20643 (Apr. 25, 2007).
[6] 78 Fed.Reg. 37741, 37750 (Jun. 24, 2013).
[7] 57 Fed. Reg. 13498 (Apr. 16, 1992).
[8] *Id.* at pp. 13511-13512.

and the ability to maintain RFP can be addressed - in part - through the required plan revision.

Most recently, a decision by the U.S. Court of Appeals for the Ninth Circuit, *Bahr v. EPA*[9] determined that contingency measures must include a future action triggered by a failure to attain or failure to make reasonable further progress. These actions can take many forms including an adopted rule that has a requirement that is only implemented when triggered, or a policy under the discretion of the agency that can occur with little further action when triggered.

Historically, U.S. EPA policy allowed California to utilize emission reductions resulting from CARB's mobile source waiver/authorization measures in the SIP, without requiring that those measures be separately submitted into the California SIP. Based on this policy in 2014, U.S. EPA approved the 2008 SIP attainment contingency measure for the 15 µg/m3 standard as meeting the requirements of the Act. These contingency measures consisted of reductions from CARB mobile source measures authorized under the waiver/authorization provisions of the Act, and a District wood smoke curtailment program trigger measure. In 2013, the 2008 SIP's attainment contingency measures were augmented with additional reductions to be achieved through incentive projects.

However, subsequent to U.S. EPA's approval of the 2008 SIP contingency measures, a decision by the U.S. Court of Appeals for the Ninth Circuit[10] determined that U.S. EPA approved mobile source waiver measures must be submitted into the SIP. Since reductions from these waiver measures were part of the 2008 SIP attainment contingency measure, U.S. EPA withdrew their 2014 approval and finalized a disapproval of the attainment contingency measures effective June 13, 2016. The disapproval started federal sanction clocks, including two to one offset sanctions and highway sanctions beginning December 13, 2017 and June 13, 2018, respectively. Subsequently, CARB submitted the waiver/authorization measures and U.S. EPA approved them into the California SIP.

III. Description of Attainment Contingency Measures

This SIP Revision consists of three complementary elements for the 15 µg/m3 annual standard that together fully address the contingency measure requirements of the Act as interpreted in *Bahr*:

1) Inclusion of a trigger mechanism directing the Executive Officer to allocate resources and enhance enforcement activities in the Valley to provide additional

[9] *Bahr v. U.S. Environmental Protection Agency* (9th Cir. 2016) 836 F.3d
[10] *Committee for a Better Arvin v. EPA*, (9th Cir. 2015) 786 F.3d 1169.

NOx reductions in the event that U.S. EPA determines the Valley failed to attain in 2020;
2) New NOx emission reductions that provide for approximately one year's worth of progress that will be achieved through ongoing implementation of CARB's mobile source program; and,
3) A commitment for development and submission of a new SIP to U.S. EPA within one year of the region's failure to attain.

A detailed description of the SIP commitment for each of these three elements is provided in the next three sections:

1. Trigger Mechanism for Enhanced Enforcement Activities

In addition to the new reductions described above, the contingency measure will include enhanced enforcement activities in the Valley to be triggered within 60 days of a U.S. EPA determination that the Valley failed to attain the 15 µg/m3 annual standard by the December 31, 2020 attainment deadline. These enhanced enforcement activities will reduce emissions that occur due to tampering and mal-maintenance over the useful life of a vehicle. Enhanced enforcement will accelerate the timing of benefits from regulations through the deployment of more enforcement staff (more frequently and/or at more locations), resulting in capturing high emitters earlier that they might be under business as usual conditions. An estimate of the emission reductions from the enhanced enforcement efforts are in Appendix A. The enhanced enforcement efforts will continue until CARB has submitted a new SIP to U.S. EPA demonstrating attainment of the 15 µg/m3 standard.

The enhanced enforcement will focus on identifying violations of CARB's On-Road Heavy-Duty Diesel Vehicles Regulation, Transport Refrigeration Unit Air Toxic Control Measure, Periodic Smoke Inspection Program and Heavy-Duty Diesel Inspection Program (Enhanced Enforcement Regulations). CARB is focusing on the heavy-duty fleet since it represents almost half of the NOx emissions in the Valley and they provide the bulk of the emission reductions needed to meet the 15 µg/m3 standard. Specifically these activities will include:

- Increasing field enforcement staffing for some or all of the Enhanced Enforcement Regulations in the San Joaquin Valley by 50 percent above the pre-trigger deployment; and
- Assigning one staff member, beyond pre-trigger deployment, to focused investigations of companies that are located in the San Joaquin Valley and/or that operate vehicles or equipment subject to some or all of the Enhanced Enforcement Regulations in the San Joaquin Valley.

New Mobile Source Reductions to Provide One Year's Worth of Progress

Implementation of CARB's mobile source control program provides new emission reductions each year as cleaner vehicles and engines enter the fleet meeting CARB's regulatory requirements for new engines standards, accelerated vehicle turn over, and zero emission vehicle mandates. These new reductions occur immediately after the missed attainment deadline, ensuring continuing air quality progress and health protection.

As discussed previously, air quality modeling projects a 2020 attainment date, coupled with an annual five percent reduction in NOx emissions leading up to attainment. As discussed in the Attainment Date Documentation section, this five percent annual reduction defines one year's worth of progress. As shown in Table 1 below, CARB's mobile source program provides 12 tpd of new NOx reductions between 2020 and 2021 which is approximately one year's worth of progress. Key programs providing these reductions include the Advanced Clean Cars, Truck and Bus, and Off-Road Equipment regulations that provide new reductions beyond those required for attainment and which do not occur until 2021.

Table 1. NOx Emissions from Mobile Sources

	2020 (tpd)	2021 (tpd)	NOx Reductions (tpd)	Percent Reduction
Mobile Sources	167	155	12	7%

2. Development of New SIP

The Act requires a SIP be developed within one year of failing to meet an attainment deadline. CARB and District staff will begin the SIP development process immediately if the San Joaquin Valley does not meet the 15 µg/m3 annual standard by the December 31, 2020 attainment deadline. In addition, implementation of additional measures that will be included in the comprehensive SIP for meeting more stringent PM2.5 standards in 2024 and 2025 will continue to provide emission reductions as a new SIP is being developed.

Integrity Element Analysis

Where a state relies upon a nontraditional emission reduction measure in a SIP such as the triggered enhanced enforcement activities described here, U.S. EPA evaluates the programmatic elements of that measure to determine whether the resulting emission reductions are quantifiable, surplus, enforceable and permanent. These four "integrity

elements," are designed to ensure that such measures satisfy the applicable requirements of the Act.[11] Each of these elements is addressed below:

- Quantifiable: CARB staff has estimated a range of emission reductions likely to occur from the implementation of the enhanced enforcement activities, these reductions and the continuing reductions from existing mobile source measures can be measured in a reliable and replicable fashion through existing air monitoring;

- Surplus: The emission reductions anticipated from implementation of the enhanced enforcement activities and reductions from existing mobile source measures are surplus in that they are not otherwise required by or assumed in a SIP-related program, any other adopted State air quality program, a consent decree, or a federal rule designed to reduce emission of a criteria pollutant or its precursors;

- Enforceable: The enhanced enforcement activities, are enforceable once triggered, in that citizens will have access to quarterly reports CARB will provide to U.S. EPA that quantify the triggered activities. CARB is responsible for undertaking the enhanced enforcement activities if the contingency measure is triggered, and citizens may file suit if CARB does not take the committed actions; and

- Permanent: The reductions from the enhanced enforcement activities are permanent in that, if triggered, they will occur until submission of a revised SIP following a failure which is as long as such reductions are relied upon in the SIP.

IV. ENVIRONMENTAL ANALYSIS

Introduction

This chapter provides the basis for CARB's determination that the proposed project is exempt from the requirements of the California Environmental Quality Act (CEQA). A brief explanation of this determination is provided in section B below. CARB's regulatory program, which involves the adoption, approval, amendment, or repeal of standards, rules, regulations, or plans for the protection and enhancement of the State's ambient air quality, has been certified by the California Secretary for Natural Resources under Public Resources Code section 21080.5 of CEQA (14 CCR 15251(d)). Public

[11] See "Guidance on Incorporating Voluntary Mobile Source Emission Reduction Programs in State Implementation Plans," October 24, 1997, at pp. 6-7; "Improving Air Quality with Economic Incentive Programs," January 2001 at Section 4.1; "Incorporating Emerging and Voluntary Measures in a State Implementation Plan," September 2004 at pp. 3-4' and "Diesel Retrofits: Quantifying and Using Their Emission Benefits in SIPs and Conformity," February 2014 at pp. 27-29.

agencies with certified regulatory programs are exempt from certain CEQA requirements, including but not limited to, preparing environmental impact reports, negative declarations, and initial studies. CARB, as a lead agency, prepares a substitute environmental document (referred to as an "Environmental Analysis" or "EA") as part of the Staff Report prepared for a proposed action to comply with CEQA (17 CCR 60000-60008). If the project is finalized, a Notice of Exemption will be filed with the Office of the Secretary for the Natural Resources Agency and the State Clearinghouse for public inspection.

Analysis

CARB has determined that the proposed project is exempt from CEQA under the "general rule" or "common sense" exemption (14 CCR 15061(b)(3)). The common sense exemption states a project is exempt from CEQA if "the activity is covered by the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA." The proposed project consists of a contingency measure to increase field enforcement staffing for some or all of the Enhanced Enforcement Regulations in the San Joaquin Valley by 50 percent above the pre-trigger deployment if the district has failed to attain the 1997 PM2.5 NAAQS or make reasonable further progress towards attainment. This proposed increased enforcement effort is within the scope of all of the previously adopted regulations affected by this enforcement effort, and would serve to achieve the reductions contemplated by those previously adopted regulations. Based on CARB's review it can be seen with certainty that there is no possibility that the proposed project may result in a significant adverse impact on the environment; therefore, this activity is exempt from CEQA.

V. ATTAINMENT DATE DOCUMENTATION

CARB staff is advancing the contingency measure element in order to address a prior disapproval and sanctions clock. Documentation related to establishing the 2020 attainment date for the 15 µg/m3 annual standard and the associated programs providing emission reductions are described in the following sections. The full scope of SIP elements will be included in the comprehensive SIP for multiple PM2.5 standards that will be completed later this year.

Air Quality Modeling

The Act requires the use of air quality modeling to relate PM2.5 levels to emissions in a region and simulate future air quality based on changes in emissions. CARB staff conducted the modeling for the 15 µg/m3 standard attainment demonstration. The

modeling approach draws on the products of large-scale scientific studies in the region, as well as collaboration between technical staff of CARB and the District. The modeling uses emission inventories, with measurements of meteorology and air quality, to establish the relationship between emissions and air quality. This modeling is used to identify the benefits of controlling directly emitted PM2.5 and the different PM2.5 precursors, and the most expeditious attainment date.

CARB staff followed U.S. EPA modeling guidance[12] in developing the attainment demonstration. The year 2013 was chosen as the modeling base (or reference) year based on analysis that meteorology in 2013 was particularly conducive to PM2.5 formation and accumulation, the availability of a detailed emissions inventory, and its inclusion as one of the years that provided the basis for designating the region as nonattainment. The modeling included the benefits of all adopted regulations. Table 2 shows the 2013 and 2020 annual emissions in the San Joaquin Valley for the five PM2.5 precursors from the baseline emission control program. NOx emissions show the largest relative reduction, decreasing nearly 40 percent between 2013 and 2020. Smaller reductions occur for Reactive Organic Gases (ROG), Oxides of Sulfur (SOx), ammonia, and directly emitted PM2.5, ranging from one to nine percent.

Table 2. 2013 and 2020 Annual Emission Inventories (tpd)

Category	NOx	ROG	PM2.5	SOx	Ammonia
2013 (tons/day)					
Stationary	39	87	9	7.2	14
Area	8	153	42	0.3	311
On-road Mobile	183	50	6	0.6	4
Other Mobile	87	34	6	0.3	0
Total	317	324	63	8.5	329
2020 (tons/day)					
Stationary	29	91	9	6.5	15
Area	8	153	42	0.3	307
On-road Mobile	97	25	3	0.6	4
Other Mobile	70	27	5	0.3	0.0
Total	203	296	59	7.8	326
Change in total emissions in 2020 compared to 2013	-36%	-9%	-6%	-8%	-1%

*Numbers may not add due to rounding

[12] U.S. EPA, 2014, *Draft Modeling Guidance for Demonstrating Attainment of Air Quality Goals for Ozone, PM2.5 and Regional Haze*, available at https://www.epa.gov/ttn/scram/guidance/guide/Draft_O3-PM-RH_Modeling_Guidance-2014.pdf

Based on these emission reductions, the preliminary 2020 design values projected for all monitoring stations in the Valley are shown in Table 3. All locations are projected to meet the standard, with design values ranging from 6.5 ug/m3 at Tranquility, to 15 ug/m3 at Bakersfield-Planz. CARB continues to work with the District in the final modeling projecting attainment of the 15 ug/m3 annual PM2.5 standard by 2020 and will include the final modeling in the comprehensive SIP that will be completed later this year.

Table 3. Modeled Preliminary 2020 Annual PM2.5 Design Values (DVs)

Site	Base Year DV (1) (µg/m3)	2020 DV (µg/m3)
Bakersfield-Planz	17.3	15.0
Madera	16.9	14.5
Hanford	16.5	13.5
Corcoran	16.3	14.4
Visalia	16.2	14.0
Clovis	16.1	14.4
Bakersfield-California	16.0	13.8
Fresno-Garland	15.0	13.2
Turlock	14.9	12.7
Fresno-Hamilton & Winery	14.2	12.5
Stockton	13.1	11.6
Merced-S Coffee	13.1	11.1
Modesto	13.0	11.2
Merced-Main Street	11.0	9.6
Manteca	10.1	8.7
Tranquility	7.7	6.5

(1) U.S. EPA guidance specifies that an average of three design values can be used to account for year-to-year variability in meteorology in modeling demonstrations. The average of 2012, 2013, and 2014 design values was used for this modeling analysis.

1. CARB Mobile Source Control Strategy Included in Attainment Demonstration

California has a long history of developing and implementing regulations to reduce emissions from on-road and off-road sources, which has resulted in the strongest mobile source control program in the nation. Several key recent regulatory efforts include the Advanced Clean Cars (ACC) program, the Cleaner In-Use Heavy-Duty Truck Regulation, and the Off-Road Regulation. Together, these programs are providing significant reductions in NOx and diesel particulate matter through 2020 and beyond.

The ACC program, approved in January 2012, is a suite of regulations that addresses both ambient air quality needs and climate change goals. The ACC program combines

the control of smog and PM2.5 causing pollutants, and greenhouse gas emissions, into a package of requirements for passenger car model years 2015 through 2025. In 2025, cars under the ACC program will emit 75 percent less smog-forming pollution than the average new car sold in 2012.

The Truck and Bus Regulation addresses the need to reduce emissions from older, high-emitting, heavy-duty trucks with long service lives. The regulation represents a multi-year effort to turn over the legacy fleet of engines and replace them with the cleanest technology available. Starting in 2012, the Truck and Bus Regulation phases in requirements so that by 2014, nearly all vehicles operating in California will have PM emission controls, and by 2023 nearly all vehicles will meet 2010 model year engine emissions levels.

The Off-Road Regulation is designed to accelerate the penetration of the cleanest equipment into California's fleets and significantly reduce emissions of diesel particulate matter and NOx from the over 150,000 in-use off-road diesel vehicles that operate in California by requiring their owners to modernize their fleets and install exhaust retrofits. The regulation affects dozens of vehicle types used in thousands of fleets by requiring owners to modernize their fleets by replacing older engines or vehicles with newer, cleaner models, retiring older vehicles or using them less often, or by applying retrofit exhaust controls.

2. District Control Strategy Included in Attainment Demonstration

Comprehensive stationary and area source controls adopted by the District provide emission reductions that are an important element of the attainment strategy. In addition, the District implements a number of programs to curtail emissions of residential and agricultural burning when elevated levels of PM2.5 are forecasted. The District Burn Cleaner incentive program also encourage the change-out of high-polluting devices and open-hearth fireplaces to cleaner devices. The District is also considering a number of new measures that will be included in the comprehensive PM2.5 SIP. Expeditious implementation of these measures can provide additional reductions within the 2020 timeframe.

3. Outreach

CARB and the District plan to hold a workshop in Bakersfield on the San Joaquin Valley comprehensive PM2.5 SIP. As part of the workshop, CARB will outline the Valley attainment demonstration for all of the PM2.5 standards, 15 µg/m3 annual, 35 µg/m3 24-hour and 12 µg/m3 annual standards. For each standard, CARB and the District will discuss the control strategy providing for attainment.

Five Percent Calculation

As previously stated, the Act requires that a region that fails to attain the standard to develop a SIP that provides for a five percent reduction in directly emitted PM2.5 or precursor emissions per year. U.S. EPA guidance specifies that the state select one of three years used to determine the area failed to attain to base this calculation. The Valley failed to attain the 15 µg/m3 annual PM2.5 standard in 2015. The 2015 design value includes annual levels for 2013, 2014 and 2015. CARB staff has selected the more recent year of 2015 to calculate five percent reduction needed annually from NOx emissions.

Table 5: Five Percent Reduction

2015 NOx Emissions (tpd)	5 Percent of Emissions (tpd)
264	13.2

VI. CONTINGENCY MEASURE SIP COMMITMENT

CARB staff recommends the Board adopt the SIP revision addressing attainment contingency measures for the 15 ug/m3 annual standard. The SIP revision includes a commitment for complementary actions that taken together fulfill the Act's requirements for contingency measures. These actions include:

1) As shown in Table 6, a commitment to achieve 12 tpd of new NOx reductions between 2020 and 2021 representing approximately one year of reasonable further progress.

Table 6: Contingency Emission Reductions

	NOx Emissions (tpd)
Mobile Source	12.0
Enhanced Enforcement Activities	0.03
SIP Revision Total	12.03

2) A commitment that within 60 days of a U.S. EPA finding that the San Joaquin Valley failed to attain the 15 µg/m3 annual PM2.5 standard by the December 31, 2020 attainment date, the CARB Executive Officer will direct enhanced enforcement activities in the San Joaquin Valley minimally consisting of:

   - Increasing field enforcement staffing for some or all of the Enhanced Enforcement Regulations in the San Joaquin Valley by 50 percent above the pre-trigger deployment;

- Assigning one staff member, beyond pre-trigger deployment, to focused investigations of companies that are located in the San Joaquin Valley and/or that operate vehicles or equipment subject to some or all of the Enhanced Enforcement Regulations in the San Joaquin Valley; and
- Target violations of some or all of the following CARB regulations consisting of the On-Road Heavy-Duty Diesel Vehicles Regulation, Transport Refrigeration Unit Air Toxic Control Measure, In-Use Off-Road Diesel Vehicles Regulation, Periodic Smoke Inspection Program, and Heavy-Duty Diesel Vehicle Inspection Program.

3) A Commitment to develop a new SIP if the Valley fails to attain the 15 ug/m3 annual standard by the December 31, 2020 deadline. Once triggered, the enhanced enforcement activities will continue until CARB submits a revised SIP addressing the 15 µg/m3 standard to U.S. EPA.

Appendix A

Enhanced Enforcement Activities Estimated Emission Benefit Calculation

1. Increase Enforcement activities in the San Joaquin Valley by 50 percent
   - In 2016, 1344 program inspections occurred in the San Joaquin Valley.
   - Current Enforcement activities in the San Joaquin Valley on average have a noncompliance rate of 19.5% and generate between $375 and $1000 in penalties.
   - Increased Enforcement activities will result in additional 672 program inspections resulting in an additional 131 violations resulting in $49,125 to $131,000 in penalties.
   - Utilizing the current Carl Moyer Cost effectiveness rate of $30,000 per ton, the additional penalties can result in 4.4 tons per year of reductions.

2. Assign one staff to focus investigations on companies that reside in the San Joaquin Valley and/or that operate subject vehicles or equipment in the San Joaquin Valley. On average, one staff investigates11 fleets per year.
   - Of the fleets identified for investigations in the San Joaquin Valley 73 percent were noncompliant generating $29,816 in penalties per violation.
   - Increased fleet inspections will result in an additional identification of 8 noncompliant fleets generating $238,528 in penalties.
   - Utilizing the current Carl Moyer Cost effectiveness rate of $30,000 per ton, the additional penalties can result in 8 tons per year of reductions.